

REMARKS

Reconsideration of the application is respectfully requested for the following reasons:

1. Amendments to Claims

Claim 1 has been amended to recite a regression process for estimating a signal-to-noise ratio (SNR) value. The regression process for estimating the SNR is described in page 5, line 11 to page 6, line 4, and also recited in original claims 4 and 5, and therefore the amendments to claim 1 do not constitute “new matter.”

The remaining changes to the claims are formal in nature and also do not constitute “new matter.”

2. Rejection of Claims 1-3 and 6-9 Under 35 USC §103(a) in view of U.S. Patent No. 6,678,657 (Bruckner) and Admitted Prior Art

This rejection is again respectfully traversed on the grounds that the Bruckner patent fails to disclose or suggest application of sub-band partitioning to noise reduction, as recited in original claim 1, much less the claimed steps of estimating SNR of an i-th sub-band, determining an over-subtraction factor of the sub-band based on estimated SNR, and determining a clean speech estimate by performing a spectral subtraction “**on each sub-band.**” Furthermore, the Bruckner patent does not disclose SNR estimation by regression, as is now recited in amendment claim 1, and such sub-band partitioning and SNR estimation are not admitted to be prior art.

Initially, it is noted that claim 1 now includes subject matter originally recited in claim 4, indicated as allowable in item 4 on page 4 of the Official Action. It does not include all of the subject matter of original claim 4 since the specific regression formula has not been added to claim. The reason is that there are a number of ways to carry out a regression process, and to limit the claims to one such process would be unduly limiting. Nevertheless, it is believed that claim 1 should be allowed for the same reasons as original claim 4. In addition, it is believed that

Serial Number 10/067,274

claim 1 is allowable based on the **original recitations** of using sub-band partitioning for noise reduction (as opposed to succeeding interpolation operations as taught by Bruckner).

Rather than using sub-band partitioning as originally claimed, the method described in the Bruckner patent simply subtracts the estimated noise spectral magnitude from the noisy spectral magnitude. Only *after* noise reduction is sub-band partitioning performed—for the succeeding interpolation operation. This is not the same as using sub-band partitioning in the noise reduction process. Moreover, the known over-subtraction procedure reduces the musical noise effect by determining the over-subtraction factor according to the SNR of the processing frame, in contrast to the originally claimed determination of an independent over-subtraction factor for each sub-band of a frame. As a result, claim 1 and claims depending therefrom are allowable not only for the recitation of the regression process, but also based on the original recitation of sub-band partitioning.

Because the proposed combination of admitted prior art and the teachings of the Bruckner patent fails to disclose or suggest the claimed combination, withdrawal of the rejection of claims 1-3 under 35 USC §103(a) is respectfully requested.

Having thus overcome each of the rejections made in the Official Action, expedited passage of the application to issue is requested.

Respectfully submitted,

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